

State of Washington  
**DEPARTMENT OF FISH AND WILDLIFE**

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Main Office Location: *Natural Resources Building* - 1111 Washington Street SE - Olympia, WA

**MEMORANDUM**

To: Brian Brown, NMFS  
Therese Lamb, BPA  
Cindy Henricksen, COE  
Kim Fodrea, USBR

FROM: Jim Nielsen, WDFW  
Marv Yoshinaka, USFWS

DATE: September 18, 2000

RE: Proposed Protection Measures for the Ives/Pierce Islands Spawning Area

The Washington Department of Fish and Wildlife (WDFW), and the U.S. Fish and Wildlife Service (USFWS) have developed the attached proposal, identifying protection of spawning, incubation and emergence habitat based upon data collected in ongoing research at the Ives and Pierce islands sites. The purpose of this proposal is to begin discussions, based on the available information, of fall and winter hydrosystem operations to provide spawning, incubation, and emergence habitat protection for naturally spawning fall chinook and chum salmon at the Ives/Pierce Islands complex site. This proposal is based upon observations and findings of research conducted at the site over the past three years. Research is continuing which will further define and refine the operations needed to protect this natural spawning habitat in the future. Future protection requirements will be determined by the results of future data collection and analysis. The objective of this proposal is to provide Columbia River mainstem natural spawning habitat for tule fall chinook, bright fall chinook, and chum salmon. Spawning habitat in the mainstem Columbia River was nearly eliminated with the construction of the hydrosystem with the exception of the Hanford Reach and the limited area downstream from Bonneville Dam. In addition, Lower Columbia River chinook salmon (includes tule stock) and Columbia River chum salmon were listed as threatened under the Endangered Species Act in March 1999.

Our observations of present operations affecting the Ives/Pierce Islands sites and SSARR projected operations give us cause for significant concerns. We are concerned that the present and forecasted operations at Bonneville Dam will have detrimental effects on spawning adult fall chinook. Recent hourly flows at Bonneville Dam have fluctuated between 150 kcfs and 97 kcfs. The operating agencies and NMFS need to consider the adverse effects of higher September flows if they do not intend to maintain these flows through October. There is potential that listed Lower Columbia Tule Fall Chinook will enter and utilize the Ives Pierce area at the higher flows and may be dewatered if flows decline in October as indicated in the SSARR forecast. In addition hourly flow fluctuations if not controlled, will be problematic for any spawners at the flows presently being projected.

In a related matter, the Columbia River Intertribal Fish Commission asks us to remind you that they have requested specific pool level operations in the lower Columbia during the tribal treaty fishery and are concerned with the lack of compliance with their requests.

We hope that the attached technical information and observations will assist the operating agencies in protecting the Ives/Pierce natural spawning area.

## **Ives/Pierce Islands Spawning, Incubation and Emergence Protection**

Spawning surveys conducted during fall of 1998 and 1999 indicated that bright fall chinook begin staging in the area in early October (October 10). In addition, tule fall chinooks were observed building redds near the mouth of Hamilton Creek on September 29, 1999. Based on subsequent redd counts and spawned out carcass counts, these tules likely arrived in the area at least as early as September 15. Chum salmon begin staging in the area about November 1. Our observations thus far indicate that on the average, the minimum depth required for access to Hardy and Hamilton creeks is 125 kcfs. This flow should provide access to these areas over the range of stream configurations that have been observed thus far. The following proposal identifies time periods and flow magnitudes that would provide an adequate amount of habitat for staging and spawning by tule fall chinook, bright fall chinook and chum salmon at the Pierce/Ives Islands complex. The specifications outlined in this proposal are based on the results of three years of observations and data collection for staging and spawning chinook and chum salmon, as well as data collection and analysis for river flows and elevations at Bonneville Dam and throughout the Ives/Pierce Islands complex.

The WDFW and USFWS believe that the following specific operations and time periods provide needed protection for chinook and chum salmon spawning, incubation, and emergence in the Ives/Pierce Islands complex.

- September 15-September 30: Bonneville Project instantaneous flat flow of 125 kcfs with no hourly fluctuations around the 125 kcfs target level. This flow level is intended to provide staging flows and a minimal amount of spawning area for the listed Lower Columbia River tule fall chinook that were observed attempting to use the area during 1999. The back-water effect that results from ocean tides produces a variation in river stage of approximately one foot in the island complex. Considering the presence of tidal fluctuations, at this low flow level additional streamflow fluctuations would nearly eliminate most of the stable spawning habitat, hence the specification of no hourly streamflow fluctuations. The 125 kcfs stable flow level will assist researchers to further define the use of the Island complex by tule fall chinook. Research data collected thus far indicate that at the proposed flows of 125 kcfs: approximately 10% of the Chinook spawning habitat will be useable.
- October 1-October 15: Bonneville Project instantaneous flat flow of 130 kcfs: with no hourly fluctuations around the 130 kcfs target level. This flow level will provide a small increase in the amount of spawning habitat for tule fall chinook, and will also facilitate staging and the initiation of spawning by bright fall chinook. The additional spawning habitat made available by increasing the flow from 125 kcfs to a stable flow of 130 kcfs will allow researchers to determine other areas within the Island complex that may be important for spawning by tule fall chinook. Again, considering the effect of tidal fluctuations on river stage, the rationale discussed above would apply to the specification for no streamflow fluctuations at the 130 kcfs flow level. Research data collected and analyzed thus far indicate that at the proposed flows of 130 kcfs 25-50% of the Chinook spawning habitat will be usable.

- October 16-October 31 : Bonneville Project average daily flow of 140 kcfs with hourly fluctuations of no more than 5 kcfs (12.5). Fluctuations below the 140 kcfs level should be restricted to hours of darkness, and fluctuations above the 140 kcfs level should be restricted to hours of daylight. Along with tidal fluctuations, a 5 kcfs streamflow fluctuation is the limit at an average daily flow of 140 kcfs in order to maintain functional spawning habitat. This flow level will provide additional habitat to support the peak numbers of bright fall chinook expected to use the area, and will also provide the additional habitat necessary to minimize the destruction of tule redds which were spawned at lower flows. It will also facilitate staging of chum salmon and improve access to Hardy and Hamilton creeks. Research data collected thus far indicate that at the proposed flow of 140 kcfs approximately 50-75% of the chinook spawning habitat will be useable.
- November 1-November 14: Bonneville Project average daily flows of 145 kcfs with hourly fluctuations of no more than 5 kcfs (12.5). Fluctuations below the 145 kcfs level should be restricted to hours of darkness, and fluctuations above the 145 kcfs level should be restricted to hours of daylight. Along with tidal fluctuations, a 5 kcfs streamflow fluctuation is the limit at an average daily flow of 145 kcfs in order to maintain functional spawning habitat. Based on- previous years observations, chum salmon spawning habitat near the north shore of Ives Island starts to become inundated at flows of approximately 150 kcfs. The limit on hourly fluctuations of 5 kcfs will prevent the alternate flooding and dewatering of this area, and minimize the chances of chum salmon being drawn into the area to build redds and then subsequently drying up those *redds*. The 145 kcfs flow level will provide minimal spawning habitat for listed chum salmon downstream from the mouth of Hamilton Creek and will also provide additional areas for the continued spawning by bright fall chinook. Research data collected and analyzed thus far indicate that at the proposed flows of 145 kcfs 85-100% of the Chinook spawning habitat and 50% of the chum spawning habitat available will be useable.
- November 15-November 30: Bonneville Project instantaneous flat flows of 150 kcfs or higher with no hourly fluctuations unless average daily flows are 160 kcfs or higher. At an average daily flow of 160 kcfs or higher; hourly fluctuations of plus or minus 5 kcfs *would* be acceptable. Fluctuations below the 160 kcfs level should be restricted to hours of darkness, and fluctuations above the 160 kcfs level should be restricted to hours of daylight. These flows will provide spawning habitat near the north shore of Ives Island in the area that has been selected and used for the past several years by chum salmon. The specification of no hourly fluctuations at a flow of 150 kcfs is to prevent the alternate flooding and dewatering of chum spawning habitat as described above. Characteristics of hyporheic flow were measured with piezometers during 1999 throughout the study area. The most significant finding from piezometer data occurred in the chum spawning area near the north shore of Ives Island. At this location, hyporheic water temperatures were relatively constant over a range from 10- 14 °C, while ambient river water temperatures declined from 14 °C to 3 °C over the same time period. The divergence of hyporheic and river water temperatures began about mid-November. A positive vertical hydraulic gradient was also measured in this area, indicating some level of upwelling. Chum salmon preference for this type of hyporheic activity is well documented in the literature.

Research data collected and analyzed thus far indicate that at the proposed flows of 150 kcfs 100% of the chinook and 75% of the chum habitat available will be useable.

- December 1-December 31: Bonneville Project average daily flow of 160 kcfs or higher with no more than plus or minus 5 kcfs hourly fluctuations. Fluctuations below the 160 kcfs or higher level should be restricted to hours of darkness, and fluctuations above the 160 kcfs or higher level should be restricted to hours of daylight. These flows will maintain coverage of chum and fall chinook redds, and if flows are higher than those that occurred during late November, additional spawning area for later spawning chum salmon would be available and chances for superimposition of redds on those redds spawned at lower flows would be minimized. Research data collected thus far indicate that at the proposed flow of 160 kcfs, 100% of the Chinook and 100% of the chum habitat will be usable.
- January 1-May 1: Bonneville Project **minimum** flows no less than the highest spawning flow through December 31 minus 10 kcfs incubation and emergence of fall chinook and chum salmon can occur into early May, depending on water temperatures and cumulative temperature units. A flow reduction of no more than 10 kcfs below the highest spawning flow would assure that no redds would be dewatered and that the mortality of incubating eggs and alevins observed during February 2000 would not be repeated during 2001. Actual emergence of fry continues through mid-June. This proposal for minimum flows through May 1 is based upon the premise that spring migration target flows for the lower Columbia River begin on May 1. The spring flow requirement for downstream migrants will provide adequate protection for emerging fry as long as flow fluctuations are controlled to avoid stranding. Stranding of fry has been documented on Pierce Island during the spring months. During the spring period through July 15, flows should be controlled to avoid extreme flow fluctuations (greater than 10 kcfs per hour) and resultant stranding of fi-y. Once average daily flows increase above 220 kcfs level, they should be maintained at or above that level. Our observations indicate that the potential for stranding at the Pierce Island site should be reduced if flows are maintained above the 220 kcfs level and flow fluctuations are limited. Stranding in other areas may occur at flows between 220 kcfs and 260 kcfs without limitations on flow fluctuations, (10 kcfs per hour). These operations to avoid stranding should be in place through July 15.

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May 18, 2000

J. William McDonald, Regional Director  
Pacific Northwest Region  
Bureau of Reclamation  
1150 North Curtis Road, Suite 100  
Boise, Idaho 83706

Mr. William Stelle, Jr., Regional Administrator  
Northwest Region  
National Marine Fisheries Service  
7600 Sand Point Way Northeast  
Seattle, Washington 98115

Dear Messrs. McDonald and Stelle:

The Washington Department of Fish and Wildlife (WDFW) has participated in discussions on issue of additional water for summer flow augmentation from the Columbia River in Washington State, in the context of the Biological Opinion that the National Marine Fisheries Service (NMFS) is responsible for providing this spring on the operation of the Federal Columbia River Power System. As you both know, WDFW has gone on record numerous times supporting the concept of augmenting river flows to provide better migrating conditions for juvenile salmon and thereby improving their survival. We believe the flow targets set by NMFS in their Biological Opinions (1995 and 1998) are justified and constitute at least a minimum level of flow needed to protect juvenile salmonid migrants. We have supported identifying additional volumes of water for flow augmentation throughout the basin both to increase the probability of achieving the Opinion flow targets and to go above them if possible. We do not believe that the current discussions on provision of adequate flows for salmonids in the mid-Columbia are sufficiently comprehensive, as they do not consider the water withdrawals for the Bureau of Reclamation's Columbia Basin Project. Accordingly, we request the Bureau initiate consultation with NMFS on the Columbia Basin Project, just as has occurred on Bureau projects in the Snake River Basin in Idaho.

At the meeting in Spokane on March 17, and the consultation meeting Monday, April 17, NMFS proposed additional drafts from Lake Roosevelt and Banks Lake as new flow augmentation measures for the 2000 Biological Opinion. NMFS is proposing to take an additional 2 feet of water from Coulee (draft to elevation 1,278 feet by August 31 rather than the current 1,280 feet) in years when the runoff volume forecast (April-August) is 80-92 million acre-feet (MAF) and an additional 5 feet of draft (to 1,275 feet) in water years when the runoff volume forecast is less than 80 MAF (roughly 26% of the years in the 50-year water record). This would amount to about 150 thousand acre-feet (KAF) and 350 KAF respectively above the amount currently identified for

flow augmentation. At Banks, NMFS proposes to reduce pumping from Lake Roosevelt William sufficient to reduce the elevation of the reservoir by 5 feet from fall in July and an additional 5 feet in August. This would amount to about 250 KAF left in Lake Roosevelt to be used for augmentation.

While we advocate additional flow augmentation, we are not convinced that these measures are the most appropriate source until we have seen a full accounting of water use and needs in the Bureau of Reclamation's Columbia Basin Project. We believe that water use efficiencies in recent years have resulted in reduced needs for adequately irrigating Project lands. We also believe that these reductions in need could be used to augment summer flows without requiring additional impacts to resident fish resources in Lake Roosevelt and Banks Lake. To that extent, we are hopeful that inclusion of the Columbia Basin Project in the examination of potential sources of flow augmentation will provide the opportunity to more evenly balance the needs of resident fish and wildlife resources with the needs of listed salmonids.

As you know, WDFW is an active participant in the Agriculture, Fish and Wildlife process (AFW), which is designed in part to bring irrigation districts into compliance with the Endangered Species and Clean Water acts. While this effort will lead to planning processes that result in these districts becoming more efficient water users, AFW does not squarely address the issue of in-stream flows and how conserved water is allocated, which is the point of this letter.

We are fully cognizant of the fish and wildlife benefits resulting from the operation of the Columbia Basin Project. The wetlands and lakes resulting from irrigation provide a significant benefit to the state of Washington. However, we believe that it is reasonable and prudent to take a close look at actual water use and needs on Project lands. We believe that this approach is consistent with the Federal Caucus' advocacy of looking at all of the "Hs" in the regional effort to recover listed salmonid stocks. Further, we do not agree that efforts to improve conditions for listed fish should always require choices over which stock or group of fish and wildlife must be sacrificed in order to provide those benefits to listed fish.

Our specific concerns for additional drafts at Lake Roosevelt include reduced primary productivity, impaired ability to conduct kokanee broodstock collection in the fall (late September through early November), reduced flows in the Columbia below Grand Coulee when Lake Roosevelt is being refilled and reduced or completely blocked passage into tributaries for spawning wild kokanee and bull trout. There are also potential problems with recreational access and tribal cultural resources that need to be addressed. Although not directly related to the summer draft, the problem with fish entrainment from Lake Roosevelt during the spring flood control draft is a serious one that needs to be addressed. This problem will be exacerbated with the implementation of VARQ flood control at Libby and Hungry Horse projects in Montana and the resulting increase in flood control draft at Lake Roosevelt in the spring. Although many of our concerns with Lake Roosevelt center around enhanced resident fish populations, it is important to remember that these populations are resident fish substitution for lost anadromous

William McDonald & William Stelle  
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production above Chief Joseph and Grand Coulee projects funded by the Northwest Power Planning Council Fish and Wildlife Program.

At Banks Lake, our concerns are for reduced productivity and recreational access that would result from a 10-foot summer draft. Banks Lake provides a significant fishery for walleye, largemouth and smallmouth bass and other species of resident fish that would be adversely affected by a 10-foot summer drawdown. In addition, shoreline wetlands supported by the present operation in the upper 2 feet of the reservoir would be seriously affected by such a change in operations. The presence of two nesting pairs of peregrine falcons at Banks Lake raises additional ESA-related concerns over the proposed draft.

Some of these concerns could be mitigated for, although there is no assurance that such mitigation would be provided through the Biological Opinion on the hydro system. We believe that there is a Federal obligation to provide that mitigation if additional drafts of these projects are implemented.

Again, thank you for the opportunity to provide input on this important issue. If you have questions or require additional information, please contact Mr. Bill Tweit (360/902-2737) or Mr. Jim Nielsen (360 902-2812) with our Intergovernmental Policy Group here in Olympia.

Sincerely,

Jeff P. Koenings  
Director

JPK:BT:db

cc: Judith Johansen, Bonneville Power Administration -  
Tom Fitzsimmons, Washington Department of Ecology  
Larry Cassidy, Northwest Power Planning Council  
Tom Karier, Northwest Power Planning Council  
Curt Smitch, OFM  
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Joint Natural Resources Cabinet  
Don Sampson, Columbia River Intertribal  
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Joe Peone, Colville Tribe  
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State of Washington  
DEPARTMENT OF FISH AND WILDLIFE

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August 22, 2000

Bonneville Power Administration  
Post Office Box 12999  
Portland, Oregon 97212

**RE: Fiscal Year 2002-2006 Power Sales Contracts**

To Whom It May Concern:

The Washington Department of Fish and Wildlife recommends that the Bonneville Power Administration include clauses in all new power sales contracts that allow Bonneville to interrupt or decrease deliveries of power during power emergencies to customers who previously were categorized as "interruptible."

Under current conditions, the only "power" contract that can be cut back without apparent difficulty is the provision for fish protection measures on the Columbia and Snake Rivers. Reduction of spill, operation of turbines outside of 1 % of peak efficiency, alteration of flows and other measures to respond to power emergencies all can have an adverse impact on listed and unlisted fish. I realize that implementation of these measures may be necessary in some situations. However, the fact that fish protection measures from the draft 2000 Biological Opinion on the federal Columbia River Power System can be easily suspended means that they will be more likely to occur than cutbacks in delivery of power to BPA customers, unless some of those customers become more clearly "interruptible." At the least, cutbacks should be equitably shared between BPA power customers and fish protection measures.

In the several power emergencies that have already occurred this summer, BPA was forced to buy-back power from contract holders on a willing seller basis, which limited the amount of power that could be secured by this means. With the inclusion of a clause allowing buy-back of certain contracts at BPA's discretion, reductions in the Northwest's power load could be more readily acquired and would be more predictable, thereby enhancing BPA's ability to respond to power emergencies and reducing impacts to fish protection measures.

Thank you for your consideration of this recommendation.

Sincerely,

Jeff P. Koenings  
Director

State of Washington  
**DEPARTMENT OF FISH AND WILDLIFE**

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September 29, 2000

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Dear Federal Caucus Members,

The Washington Department of Fish and Wildlife (WDFW) has reviewed the Draft Federal Columbia River Power System Biological Opinion (FCRPS BiOp) from the National Marine Fisheries Service (NMFS), as well as the Draft Basin Wide Salmon Recovery Strategy (Strategy) from the Federal Caucus, both issued July 27, 2000, and offers the following comments on each.

As we have consistently noted, for example in our comments on the draft Lower Snake River Juvenile Salmon Migration Feasibility Report/EIS, the Federal Caucus has not sufficiently explored "aggressive" hydro as an alternative to dam breaching or removal. The July 2000 recommendations of the Four Governors documents the regions support for "further modifications to the configuration and operation of the hydrosystem where appropriate and necessary to benefit fish and so long as the modifications do not jeopardize the region's reliable electric supply". The Four Governors criteria for evaluating "aggressive" hydro improvements is impacts to system reliability, not simply maintenance of the current rate structure. By offering relatively few meaningful changes in mainstem actions, the draft

Strategy and BiOp appears to back away from the "aggressive" hydro option, as there is no discussion of potential improvements and their likely impacts to reliability. We believe inclusion of the following types of actions would form the basis of a responsible balancing of power needs, flood control needs, transportation needs, irrigation needs and salmon needs:

- more spill;
- better flow augmentation;
- reduced irrigation withdrawals based on increased project efficiencies; and
- revised flood control on a basin-wide scope, not selectively as in this draft.

The overall balancing of risk in both the BiOp and the Strategy troubles us. The blueprint drawn by the Federal Caucus uses optimistic estimates of survival and benefit, and a comprehensive, but generalized list of offsite mitigation activities, to transfer much of the ESA burden away from the FCRPS. The risk of failure is transferred to the listed species and the responsibility for recovery is transferred to the managers who will actually accomplish the offsite mitigation. We are reminded of a quote from United States District Court Judge Marsh in his Opinion and Order for American Rivers, et al. vs. NMFS (at p. 26, lines 5-11), "Whether the salmon may be saved in time to benefit from such long term system improvements is the risk that NMFS and the action agencies have assumed within this process. Given the dwindling numbers, time is clearly running out. As a long-time observer and examiner of this process, I cannot help but question the soundness of the selected level of risk acceptance..." Although Judge Marsh was commenting on the 1995 Opinion, his criticisms seem appropriate to the present document.

Related to this apparent transfer of risk is a clouding of accountability. NMFS has not defined the extent of loss for each of the listed species that results from construction and operation of the FCRPS, as was done in past BiOps. By failing to do so, the accountability of the FCRPS for achieving improvements in the other Hs is lacking, and as a result, NMFS does little to help clarify the scope of the Action Agencies' responsibility for recovery of listed salmon and steelhead in the basin. This failure also contributes to confusion around funding allocation issues, as described in the Washington State letter reviewing the draft Strategy. Nonetheless, the draft does make it clear that unless significant additional funding is available, the BiOp and the Strategy are going to be impossible to implement.

One of our most serious concerns with the BiOp is that, because it offers relatively little new in mainstem actions, it saddles Washington with some very difficult trade-off situations for fish and wildlife resources. For instance, the Federal Caucus decision to conduct a very limited consultation with the Bureau of Reclamation (BOR) on the Columbia Basin Project, leaving irrigation withdrawals untouched, forces all of the balancing burden on Washington; we must weigh potential large disruptions to the fish and wildlife resources of Lake Roosevelt and Banks Lake with the genuine needs for

instream flows for salmon in the mainstem below Chief Joseph Dam. Another instance is balancing between flows necessary to provide a

suitable spawning and incubating environment for chinook and chum salmon at Ives Island and the flows necessary to meet the terms of the Vernita Bar Agreement, since very few new sources of flow augmentation have been identified in this BiOp. Even though there have been a number of additional listings under ESA since the 1995 BiOp, there are very few new measures implemented for their protection. The very few new sources of flow augmentation water identified (many of which will likely not be delivered), minor changes in spill and some physical improvements at some of the projects seem inadequate to address the newer, as well as the older listings.

Balancing between resident fish needs in Lake Roosevelt, and the conservation needs of salmonids downstream of Chief Joseph, is not a simple -prioritization for Washington, nor should it be for the Federal Caucus. The resident fish programs above Chief Joseph are a mitigation for one of the oldest, and most permanent, impacts of the FCRPS: the extirpation of the salmon and steelhead runs above Chief Joseph. The resident programs are a replacement for the lost ecosystem benefits, cultural benefits and economic benefits that resulted from the FCRPS blockage. While it cannot address the blockages themselves, this BiOp should be mindful of the resulting impacts and should be cognizant of the value of our mitigation for those impacts.

We strongly urge the Federal Caucus to produce a second draft of the Strategy, as the present draft and the BiOp leave too many unanswered questions. The second draft should be responsive to regional comments, and should also build upon more extensive coordination with state governments. The sections of the current draft that are currently too sketchily described to allow fruitful evaluation include the structures for accomplishing the offsite mitigation tasks, funding issues, and the role and efficacy of the performance review process. Neither the BiOp nor the Strategy effectively describes how the success or failure of the BiOp can be adequately assessed at the five and eight year "check-in points". There is a need for greater coordination by the Federal Caucus with the states and tribal co-managers in developing the one year and five year plans for all the Hs and in implementing and evaluating recovery measures.

We appreciate most of the treatment of harvest and hatchery issues in the Strategy, but we are very disappointed by one aspect of the harvest issues. The proposal to place a majority of conservation burden on non-Indian fisheries runs counter to the harvest sharing provisions of U.S. vs. Oregon. We are firm supporters of the Treaty guaranteed tribal right to harvest fish; but we cannot support preferential exercise of those rights resulting in great disparities in harvest, or worse, in elimination of non-treaty fishing opportunities.

This BiOp and the USFWS BiOps on Kootenai River sturgeon and bull trout and Snake River snails need to be better integrated. There are often direct conflicts between the measures in the NMFS FCRPS BiOp and the USFWS BiOps.



WDFW Comments on the Federal Strategy and the FCRPS BiOp  
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In closing, I appreciate the immensity of your undertaking and applaud the quality of your product. Crafting the framework for a recovery strategy in the Basin is a thankless task, and one that is bound to attract more criticism than praise. Please do not interpret our comments, which are primarily critical in nature, as a rejection of your efforts. Instead, our comments are intended to build upon your efforts, to provide the best possible framework for accomplishing our stewardship mission. Thank you for the opportunity to review and comment on these drafts.

Sincerely,

Jeffrey P. Koenings  
Director

Enclosures

cc: Larry Cassidy, NWPPC  
Tom Karier, NWPPC  
Don Sampson, CRITFC  
Brian Allee, CBFWA  
Curt Smitch, Chair, Joint Natural Resources Cabinet  
Bob Nichols, Office of the Governor  
Jim Greer, ODFW  
Rod Sando, IDFG  
Randy Settler, Yakama Nation  
Joe Peone, Colville Tribe  
Keith Underwood, Spokane Tribe of Indians

WDFW Comments on the Federal Strategy and the FCRPS BiOp  
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bcc: Tweit, Nielsen, Woodin, Foster, D. Johnson, M. Tudor, Atkins, Brittell, Van  
Tussenbrook, Tayer, Beich, Andrews, Burley, Easterbrooks, J. Foster, Whalen F.  
Woods  
T. Grover, AIDOE Spokane

**COMMENTS OF THE WASHINGTON  
DEPARTMENT OF FISH AND WILDLIFE  
ON THE DRAFT NMFS 2000 FCRPS BIOLOGICAL  
OPINION,  
THE DRAFT BASIN-WIDE SALMON RECOVERY  
STRATEGY AND THE DRAFT USFWS BIOLOGICAL  
OPINION FOR KOOTENAI RIVER STURGEON AND  
BULL TROUT**

**SUMMARY OF RECOMMENDATIONS**

The following is a summary of the specific recommendations WDFW is making for modifications of additions to the measures in the Draft 2000 FCRPS Biological Opinion:

1. The BiOp should include an updated estimate of the effects of the FCRPS on listed salmon and steelhead throughout the basin as was done in the 1995 BiOp. This will clarify the scope of the Action Agencies' responsibilities for recovery of listed salmon and steelhead.
2. WDFW formally requests an active role in the consultation between NMFS and BOR on the Yakima Basin.
3. NMFS should use more conservative measures of risk of extinction, a higher extinction threshold, less optimistic assumptions based on a "weight of evidence" approach (or at least a range of assumptions), allow for non-linearity in declining population levels and not assume low productivity for hatchery fish spawning in the wild. This will give a more realistic assessment of risk of extinction and more realistic estimates of the effects of the RPA.
4. There must be a clearly defined role for the state co-managers in developing the 1 and 5-year plans.
5. The chum spawning flows at Ives Island are too low and must be improved. SOR 99-28 is attached with WDFW's recommendations for this measure.
6. NMFS and BOR should re-initiate consultation on the Columbia Basin Project to determine what water conservation measures can be specifically implemented there and the water saved should be made available for flow augmentation for listed salmon and steelhead.
7. VARQ flood control should not be selectively implemented at Libby and Hungry Horse projects. System flood control should be revised basin-wide, instead. If NMFS, BOR and the Corps proceed with VARQ at Libby and Hungry Horse, the scope of

NEPA compliance studies should be expanded beyond what is stated in the BiOp to include Grand Coulee and the

mainstem Columbia downstream.

8. Installation of additional turbines at Mica and/or Revelstoke projects in Canada should be an action in the RPA.

9. NMFS and BOR should develop a specific water conservation plan for each BOR project and a timeline for implementing these savings. A clearly defined portion of these savings should be identified for use in flow augmentation.

10. In the Corps' study of revising flood control, they should take advantage of recent advances in long-range climatological forecasting to improve their ability to manage flood control without adversely affecting spring and summer flows.

11. The proposed NMFS study on transportation of fall chinook subyearlings in the Snake must include provisions for summer spill at all four collector projects in order to provide adequate conditions for in-river fish. The study should also specifically address how it will investigate differential delayed mortality of transported fish ('13").

12. NMFS and the Action Agencies should implement additional spill beyond the "early implementation" plan they developed this spring. This would include 24-hour spill during the spring at all projects, increases in spill at The Dalles and Bonneville and provision of summer spill at collector projects to support the proposed transportation study on subyearling fall chinook.

13. NMFS should require BPA to include "interruptibility" clauses in appropriate new power sales contracts in order to allow more flexibility in dealing with power emergencies without reducing or eliminating fish protection measures.

14. Any study of white pelican life histories and predation in McNary Pool must be coordinated with W1DFW since the white pelican is listed as "endangered" under the state Endangered Species Act.

15. EPA should be considered an Action Agency for the FCRPS in regards to Clean Water Act Compliance. NMFS should consult with EPA, USFS and BLM on Clean Water Act compliance on federal lands controlled by USFS and BLM.

16. All hatchery releases must be marked or otherwise readily identifiable as hatchery fish.

## **2000 FCRPS BIOLOGICAL OPINION SPECIFIC COMMENTS**

### **1.0 OBJECTIVES**

On page I - 1, we note the statement that "...this Biological Opinion does not attempt to apportion the relative contribution of the FCRPS and the BOR projects to the current status of the ESUs". This is at variance with the approach taken in earlier Opinions. For instance, on page 7 of the 1995 Biological Opinion, "NMFS has estimated that of ' the ten million historical losses of salmon and steelhead, eight million, or 80%, is attributable to hydropower development and operation." This statement was taken from an earlier document "Factors for a Decline", published by NMFS in June 1991. By ignoring this previous work and failing to build on it to include additional ESUs, NMFS does little to help clarify the scope of the Action Agencies' responsibility for recovery of listed salmon and steelhead in the basin. The new Opinion should include an updated estimate of the effects of the FCRPS on listed salmon and steelhead throughout the Columbia Basin.

On page 1-3, we are very interested in the supplemental Biological Assessments being required of BOR for projects located in Washington downstream of the Chief Joseph project, especially the Yakima Basin. Effects on stream flows and fish in that system resulting from BOR water development have been profound. WDFW looks forward to participating in the development of the Opinion for the Yakima. We formally request that the BOR and NMFS make such participation by WDFW possible.

On page 1-9, we agree with the statement that actions carried forth under the Opinion should "avoid adverse effects on listed individuals and their habitat to the greatest extent reasonably prudent, then provide offsetting mitigation for adverse effects that cannot be avoided." This is the proper response to the effects documented under a revised "Factors for a Decline" discussed above. Also, in regards specifically to the lower Columbia navigation channel-deepening project, we find this statement to be at odds with NMFS' actions in approving that project earlier this year. NMFS' decision to withdraw the "No Jeopardy" opinion on the channel deepening project provides an opportunity to apply this approach to that situation.

In section 1.3.2, we are concerned that NMFS has used an absolute extinction threshold of one fish returning in a 5-year period. Populations of fish are at a high risk of extinction at levels of return much higher than this. The Biological Requirements Work Group formed to develop threshold population levels for Snake River ESUs set much higher levels than 1 fish in 5 years. NMFS should use a much more conservative extinction threshold number in its evaluation since the 1 fish returning in a 5-year period seriously underestimates the probability of extinction for



the listed species.

The proposed definition of high risk of probability of extinction of 5% within 100 years of having 1 fish return during a 5 year period is inconsistent with the 1% probability used by NMFS in the Anadromous Fish Appendix to the Corps' Lower Snake River Feasibility DEIS. This relaxation of an already-lax standard for evaluating risk of extinction is not warranted nor is the reason for this change explained in the BiOp.

There are several other technical concerns with NMFS' approach to evaluating risk of extinction including

1. The use of optimistic assumptions not based on a "weight of evidence" approach as used in the PATH process. This results in an overly-optimistic assessment of the effects of the RPA.
2. Assuming a linear decline in population levels when such declines are more often non-linear, the assumption that there is no density dependence regardless of population numbers during recovery. This can result in an overestimate of productivity in stocks whose numbers are approaching recovery.
3. Assuming low productivity of hatchery fish spawning in the wild. While this may indeed be the case in some instances, there is good evidence to suggest that some hatchery "escapees" are highly effective in spawning in the wild. This has the effect of overestimating the productivity of the wild component of some listed stocks and thus overestimates the probability of recovery and underestimates the additional survival improvements needed for off-site mitigation.

### **3.0 PROPOSED ACTION**

The proposed action put forth by the Action Agencies is a status quo operation based on existing Biological Opinions and thus not sufficient to avoid jeopardy. In Section 8.0, NMFS correctly concludes that the proposed action will not avoid jeopardy. We agree.

### **6.0 EFFECTS OF PROPOSED ACTION**

Section 6.2 Effects of FCRPS Operations - Action Area Biological Requirements. Last paragraph should be modified to state that load-following operations at hydrosystem projects also adversely affect benthic organisms.

On pages 6-10 to 6-11 we appreciate the discussion of the importance of the plume of the



Columbia River on juvenile salmonids and the need for more research on this issue. This is another strong argument for protecting mainstem flows from further depletions. Also, estuary research should focus on the entire ecosystem, not just on salmonids. Also, this expansion of the scope of investigation clearly requires significant new funding, either from BPA or Congress, in order to avoid setbacks in other areas.

On Page 6-27, there needs to be an explanation of the difference between irrigation diversion amounts and actual consumption. Also, there needs to be an estimate of the amount of unconsumed water that returns to the stream it is diverted from and the effects on water quality and quantity from those return flows.

On page 6-28, we strongly disagree with the conclusion that "Even if BOR discontinued delivering water for irrigation, it is unlikely that all the released water would remain in-stream. Private diversions would probably capture some fraction, perh2ps most (emphasis added) of the water." While this may be true in certain limited circumstances, we have trouble believing that nearly 33 million acre-feet of water would be diverted by private parties, either legally or illegally, absent federally-developed diversion systems. This is very definitely the case with the Columbia Basin Project, which would have been far beyond private means to develop. We are also troubled by the implications of this argument. Does an action agency program somehow constitutes less jeopardy to a listed species, simply because some other entity would operate a similar program if the action agency were to be discontinued?

On page 6-3 1, the statement that "no flow depletion effects are expected as a result of BOR based irrigation operations during the lower Columbia River chum and fall chinook flow management season (November through March) is only correct if there are no net diversions into Banks Lake from Lake Roosevelt during that period, regardless of purpose. Also, fall chinook utilize mainstem. spawning areas during late September and October and would be affected by BOR operations during that time. Implementation of VARQ flood control at Hungry Horse, a BOR project, could affect winter flows in the lower Columbia in some years, as well.

6.2.5.2.4 Cumulative Hydraulic Effects. It is misleading to characterize Snake River basin storage capacity in terms of the entire Columbia basin (7% of total). A most realistic metric would be the percentage of storage capacity in the Snake basin itself compared to average total runoff volume in the basin. The statement as written is only true for the effects of Snake River storage on flows at McNary Dam downstream.

6.2.5.2.5 Additional Effects of the Columbia Basin Irrigation Project. The discussion under water quality should evaluate return flows on the basis of their compliance with the Clean Water Act. They should be treated as an industrial discharge. For example,

what is the mixing zone for each return flow? What is the effect of the mixing zone on resident and migratory fish?

In regards to the Burbank No. 2 and No. ") diversion pumping plants, there must be a specific requirement in Section 9 (Reasonable and Prudent Alternative) requiring BOR to screen these intakes in compliance with Washington state screening standards. V/DWV Yakima Screen Shop has been working with BOR to get these diversions screened and it is our understanding that the tentative schedule for completion is sometime in 2002. This action should be included in the RPA. In our comments on Section 9.0, we recommend a specific action requiring BOR to screen these diversions.

Table 6-2.5 on page 6-37 should clarify in the first footnote that the Bonneville flow objective of 125 kcfs is superseded by McNary objectives after March 31. There is still a need for flows below Bonneville after March 31, but the McNary spring objective is much higher. WDFW believes that the Bonneville 125 kcfs objective is too low to allow utilization of more than a fraction (perhaps 30%) of the available chum mainstem spawning habitat below Bonneville. Please see our comments on the 2000 supplemental Opinion. See our comments in Section 9.0.

On page 6-59, section 6.2.9.5.1 Juvenile Rearing Areas, a Bonneville outflow of 200 kcfs or greater was required to provide sufficient depth over chum and chinook redds; at Ives Island when spill at Bonneville was being provided at 120% of total dissolved gas saturation. At lower levels of spill, less flow would have been required to provide compensation depth. The section needs to be modified to clarify this point.

On page 6-70, section 6.2.9.11.4. There is a high likelihood that Bonneville Dam has served as a block to adult chum passage. Chum are notoriously reluctant to pass barriers that pose no problem for other salmon species. This is likely a survival trait related to the fact that chum fry move to the estuary very shortly after emergence.

In section 6.2.9.11.5, it should be pointed out that maintaining flows of no more than 125 kcfs at Ives Island will mean that only 30% of the available chum spawning habitat will be usable. In System Operating Request (SOR) 99-28 recommendations were made to make better utilization of this habitat than is provided by the proposed operation.

## **8.0 CONCLUSIONS**

On page 8-9, we disagree with NMFS that the proposed action is not likely to jeopardize the continued existence of LCR chinook salmon or to destroy or adversely modify designated critical habitat. The mainstem spawning habitat at Ives Island is adversely modified by the proposed operation in that the LCR chinook are intentionally denied access during late September and all of October. In the interest of protecting this aspect of LCR chinook life history (mainstem spawning), action should be taken to provide access to this area for this ESU. NMFS does include this as a Conservation

Recommendation in Section 11.0, but this means that it is entirely discretionary on the part of the Action Agencies is not likely to occur except as a by-product of

power operations.

On page 8-18, we note that NMFS has properly concluded that the proposed operation of the FCRPS and BOR projects will jeopardize the continued existence of the Columbia River chum salmon and adversely jeopardize its designated critical habitat. However, we also point out that the proposed operation was from the 2000 interim Biological Opinion and is the same operation contained in Section 9, Reasonable and Prudent Alternative. NMFS does note in this section that there are "additional survival improvements beyond those likely to result from the proposed operation are reasonably available" but fails to explain what those additional improvements might be or to recommend their inclusion in the RPA.

We also note a typographical error in section 8.11.2. The reference should be to CR chum, not LCR steelhead.

## **9.0 REASONABLE AND PRUDENT ALTERNATIVE**

As a general comment, it is somewhat disquieting to see NMFS base this Opinion on an indefinite set of offsite actions intended to make up for the acknowledged shortcomings of the FCRPS hydro actions laid out in this section. The planning timeline, with 1-year and 5-year plans is very optimistic and will be very difficult to keep on schedule, even with the full cooperation of all involved. This, coupled with the fact that even assessing the status of the listed ESUs under current conditions is uncertain (page 9-4) shows that a great deal of risk to the listed species is being taken in order to maintain the full integrity of the FCRPS.

Section 9.2.2.2.2 underlines this concern, by admitting that there was sufficient information to conduct quantitative analyses to estimate offsite mitigation goals for only 5 of the 12 ESUs covered by this Opinion. Even for these few ESUs "substantial uncertainty still exists about the estimated level of improvement needed, the estimated survival benefit of offsite mitigation actions and the estimated effects of other ongoing and anticipated actions." Taken as a whole, it appears that this RPA and the associated Conceptual Recovery Strategy is recovery based heavily on hope and good intentions.

On pages 9-14 to 9-15, the Opinion refers to the need to evaluate the effectiveness of offsite habitat actions within the first 5 to 8 years. WIDFW believes It is very optimistic to think that a new habitat action can be planned, implemented, baseline performance data collected and show measurable biological effects within such a short period. This underlines the risk associated with placing such a high reliance on offsite mitigation to make up the acknowledged deficiencies of the hydropower actions in the RPA.

This Opinion is the first one dealing with listed Columbia and Snake River salmon in which seeking ESA exemptions (going to the "God Squad") is included in the decision path in the event

NMFS issues a failure report on the RPA (Figure 9.4-2 and pages 9-23 and 9-24). Although we recognize that this is an established part of the ESA process, the fact that this option is clearly laid out as one that could be taken for at least some of the Columbia and Snake River ESUs is an ominous sign.

In Section 9.5, the discussion on the development and implementation of the 1-year and 5-year plans, there is no role defined for the state fishery agencies and tribes in their development. Especially for the offsite mitigation portion of the plans, this lack of involvement could lead to problems and conflicts with the implementation of such plans. Providing this role is essential. A clear explanation of the role of all entities involved, including the fishery management agencies and tribes is needed.

In Section 9.5.2.2, Operations, the expectation that the Technical Management Team could only meet every week or even only monthly, during the peak of the spring outmigration is highly unlikely. The proposed development of inflexible "cookbook" decision criteria that would allow the operating agencies to run the system without frequent input from the fishery agencies and tribes (if they choose to participate in the TMT) is fraught with risk. As an example, in 2000, the Ringold Hatchery was forced to release their yearling chinook program early (in February) because of disease problems in the rearing ponds. As a result, the passage index for yearling chinook at McNary in April appeared to be very low (in comparison to historic data) when the question of when to initiate spill was addressed. Using a set of decision criteria based on "average" conditions would have meant that spill would have been delayed despite the fact that yearling chinook from sources other than Ringold Hatchery were passing that project in good numbers. We understand the desire of the Action Agencies to be able to conduct their business without outside interference as much as possible, but we do not believe this is the best approach for the fish.

In sections 9.5.2.6 and 9.5.2.7 where 1-year and 5-year plans are to be developed for offsite mitigation for hatcheries, harvest and habitat measures, we note the same silence on the role of the state fishery management agencies and tribes. Again, this role must be clearly stated.

Section 9.6. 1, Hydro Measures to avoid jeopardy contain very little in the way of new "aggressive" measures beyond those already set forth in the 1995 Biological Opinion and the 1998 and 2000 supplemental opinions. The heavy reliance on an as-yet undefined package of offsite mitigation actions, many of which cannot reasonably be implemented and have demonstrable benefits within the time frame of the Draft Opinion casts a pall of uncertainty over the adequacy of the RPA. To quote United States District Court Judge Malcolm F. Marsh in his Opinion and Order for American Rivers, et al. vs. NMFS (at p. 26, lines 5-11), "Whether the salmon may be saved in time to benefit from such long term system improvements is the risk that NMFS and the action

agencies have assumed within this process. Given the dwindling numbers, time is clearly running out. As a long-time observer and examiner of this process, I cannot help

but question the soundness of the selected level of risk acceptance..." Although Judge Marsh was commenting on the 1995 Opinion, his criticisms seem appropriate to the present document, as well.

In Section 9.6.1.1.3, Improving Juvenile Reservoir Survival, NMFS states that "numerous measures are planned to improve reservoir survival rates". These include increased flow augmentation for summer migrants, reduction in water level fluctuations and management of predators, including birds, mammals and fishes other than northern pikerninnow. Especially in the case of increased flow augmentation, it is uncertain that many of the proposed measures can or will be implemented. In the case of other measures, the assumptions NMFS used in estimating the effects are generally the most optimistic ones available.

Section 9.6.1.2.1 should be modified to read in the third bullet "Provide minimum flows in the fall and winter months to support limited mainstem spawning and incubation below Bonneville Dam in some years." [Emphasis added] Also, Table 9.6-1 does not include the Bonneville flow objectives for chum spawning and incubation from the supplemental 2000 Opinion. In reality, much higher flows are needed to provide reasonable utilization of this habitat by lower river chum, lower river bright chinook and lower river fall chinook. These flows were initially outlined in System Operating Request 99-28 (Enclosure 1), submitted to the Action Agencies in 1999. A memorandum to the Action Agencies and NMFS from WDFW and USFWS dated September 13, 2000 (Enclosure 2) further describes these requirements, including flows for lower river fall chinook in September and October. The flow measures included in the RPA for chum will only allow utilization of about 30% of the available habitat at Ives Island. These RPA measures were chosen not for biological reasons or on the basis of their effect on chum recovery but rather on the basis of what the FCRPS could provide under the status quo.

On page 9-41 under the discussion about summer flows at McNary Dam, the assertion that if numbers of juvenile fish migrating during late August "decrease sharply" the TMT should consider saving flow augmentation water for fall spawning below Bonneville Dam should be viewed with caution. A sharp reduction in juvenile passage can be artificially induced by significantly reducing flows, which means that the juvenile migration will be extended beyond what it would otherwise have been. This is another example of the need for weekly attention to fish passage issues and a reason to be very skeptical of the use of "cookbook" decision criteria in deciding river operations. It also underlines the fact that few new measures have been implemented to improve conditions for the species listed since the 1995 Opinion and that existing measures are being spread ever thinner to accommodate the needs of more species.

On pages 9-41 and 9-42, the proposed action to provide flows for chum spawning below Bonneville ignores the needs of lower river "Tule" fall chinook and lower river

bright chinook in the same area. Also, we do not agree with the prioritization of compliance with the Vernita Bar Agreement over providing flows for listed chum. WDFW places a great deal of importance on

Vernita Bar compliance, but not above supporting wild, natural spawning of listed salmon. The same statement occurs on page 9-43). As a practical matter, conflicts between the RPA measures for chum and the requirements for controlling flow at Vernita Bar are unlikely. The Vernita Bar Settlement Agreement (at section C.1.b) stipulates " [d]uring the Spawning Period, Grant [PUD] will operate Priest Rapids Project No. 2114 to the extent feasible through use of the Mid-Columbia Hourly Coordination and Reverse Load Factoring to produce a Priest Rapids Outflow during Daylight Hours equal to 68% of the daily average Wanapum inflow. This obligation shall be in effect only if the daily average Wanapum Inflow is between 80 kcfs and 125 kcfs. The goal during the Spawning Period is to limit spawning to the area below the 70 kcfs elevation on Vernita Bar." A major concern that has been expressed is that requiring flows of even 125 kcfs at Bonneville would require such high flows in the mid Columbia that would make it impossible for Grant PUD to meet its FERC requirements for Vernita Bar. This is clearly not the case since the agreement covers flows at Wanapum as high as 125 kcfs on a daily average.

The statement on page 9-42 that operations will be conducted below Bonneville to discourage redds from being established in the Ives Island area in order to facilitate meeting Vernita Bar requirements is highly unrealistic since such measures would have to be maintained for the entire spawning period from October through early January. What this section does is eliminate any assurance of protection for the only remaining mainstem spawning area in the lower Columbia River. It only underlines the severe inadequacy of NMFS' so-called "aggressive" hydrosystem measures contained in the RPA and the fact that no significant new measures have been taken to address the needs of species listed since the 1995 Opinion.

The flows for spawning and incubation at Ives Island must be managed on an instantaneous basis, not a "daily average" as stipulated unless flows are expected to be above the level where redds would be dewatered. Intermittent dewatering of redds will be assured if only daily average flows are considered. No information exists to assess the effects of redd dewatering at this site prior to hatching. After hatching, dewatering of redds would cause significant mortalities among the sac fry.

Also on page 9-42 the statement that any operation below Bonneville will only commence once chum are "seen" in the area ignores the fact that chum cannot enter the area until even the minimal operation outlined in the Opinion is provided. This means that in most years, the spawning area won't be watered up until it occurs as the result of power operations. Flows of at least 125 kcfs instantaneous for chum staging should be provided by the last week of October (and earlier for chinook spawning). WDFW commented extensively on the inadequacy of the draft supplemental opinion measures for chum and lower river chinook. Most of those inadequacies have been carried over into the draft Opinion. In the third bullet, the last sentence

should read "Action Agencies shall manage storage with natural flow to provide peak flows within a range of 5 kcfs above the established minimum."

Section 9.6.1.2.3 specifies implementing VARQ flood control operations at Hungry Horse (2000) and Libby (2001). While WDFW understands the desirability of VARQ from the standpoint of the State of Montana, those benefits come at the cost of additional flood control drafts at Grand Coulee in order to maintain existing, outmoded system flood control requirements. Until such time as a total revision of system flood control requirements is in place, WDFW opposes the selective implementation of VARQ at Libby and Hungry Horse projects and any additional impacts to Grand Coulee in the form of flood control shifts from the Snake River as recommended on page 9-47. Also, selectively implementing VARQ will substantially reduce lower river flows during the winter period in some years, which could adversely affect the ability to provide adequate flows below Bonneville Dam for listed chum and for chinook. For these reasons, WDFW opposes the selective implementation VARQ flood control at Libby and Hungry Horse projects.

On page 9-46, an additional 2' draft of Grand Coulee reservoir in below average runoff years is proposed. WDFW sent a letter to J. William McDonald, Regional Director of the BOR and William Stelle, Jr. Regional Administrator for NMFS (Enclosure 3) stating that we were not in support of these additional drafts at Grand Coulee and Banks Lake. Instead, we suggested that the BOR should consult with NMFS on the operation of the Columbia Basin Project with the view that there were potential water savings there that could be left in Banks or Roosevelt rather than further impacting resident fish resources. Unfortunately, the consultation resulted in nothing more than an empty action suggesting that BOR implement water conservation measures at its projects and make some undefined portion of those savings available for flow augmentation see page 9-5 1). We encourage NMFS and BOR to reconsider this decision not to pursue water conservation measures in the Columbia Basin Project and make those water savings available for salmon flow augmentation without providing additional impacts to Banks Lake and Lake Roosevelt.

On page 9-47, as stated earlier, WDFW would oppose any flood control shift from the Snake (Brownlee and/or Dworshak) to Grand Coulee. If VARQ flood control is implemented at Libby and Hungry Horse projects, the cumulative additional flood control draft impacts at Grand Coulee and potential negative effects on downstream flows in the mid-Columbia would be unacceptable. We believe a better solution is to revise the unnecessarily conservative system flood control program on a basin-wide basis as is proposed on page 9-55.

On page 9-48, any NEPA compliance studies relating to implementation of VARQ at Libby and/or Hungry Horse should also include effects on Grand Coulee and on flows in the Columbia River downstream. The narrative accompanying this action does not explain the effects on Grand Coulee and the Columbia below Grand Coulee that would result from implementation of VARQ at just Libby and Hungry Horse.

On page 9-49, VYDFW believes the impacts to Banks Lake from a 5' draft during July and

August would have relatively minor impacts on the fish and wildlife and the recreational use of Banks. This proposed operation is within the authorized operating range for Banks. We are very concerned, however, with the potential adverse effects of a 10' draft during that time period that is proposed separately on page 9-54.

On page 9-50, the two proposed actions relating to additional water out of Canada sound promising, but the likelihood of achieving either one within the time span of the Biological Opinion seems remote unless NMFS and BPA agree to make installation of additional turbines at Mica and Revelstoke an action under the RPA.

On page 9-5 1, the stipulation that BOR shall pursue water conservation measures at its projects and make a "reasonable" portion of such savings available for the benefit of listed species is so vague and unquantified as to be meaningless. To be of any use, more specific goals, by project, should be provided and there should be some definition of what is a "reasonable" portion of these savings to be set aside for flow augmentation. NMFS and BOR need to develop a specific plan for each BOR project showing potential savings and a timeline for achieving them.

WDFW is very interested in the supplemental project-specific consultation for the Yakima Basin, There is no role for state agencies identified in this action statement. This needs to be remedied.

On page 9-54 the BOR is directed to assess the effects of a total 10' draft from Banks Lake during July and August. WIDFW does not support this proposal because of its potential heavy impacts on the fish, wildlife and recreational resources at Banks and the relatively small amount of water it would make available for flow augmentation.

Also on page 9-54 is a proposal to draft Dworshak Reservoir an additional 20' (from 1520' to 1500') during September to evaluate the effects of additional cold water releases during that period on adult passage into and up the Snake River. WDFW believes this is a subject worth studying on an experimental basis and does not support proposals to reserve some of the existing juvenile augmentation water from Dworshak for this use. The existing (and inadequate) summer flow objective of 50-55 kcfs for the Snake can only be achieved in some years with the full augmentation volume from Dworshak and NMFS research has shown that the summer flow objective for the Snake should be much higher, as high as 85-90 kcfs. Thus, taking water from juveniles for the purpose of studying the effects of September augmentation is not a wise course of action and we support the proposal from the standpoint of an experiment. The proposed action needs to stipulate that this is an experiment and set a time period for conducting the study and evaluating the results.

On page 9-55, WDFW supports the recommendation that a rigorous study of flood control needs in the basin should be conducted. The existing flood control program is overly conservative and has drastic effects on fish resources and reservoir refill in many years. The 2000 water season is

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a dramatic demonstration of this problem. We would recommend a tighter time line for completing the study, however. Four years seems like far longer than necessary for the Corps to compile and analyze existing information. This same requirement was placed on the Corps in the 1995 Biological Opinion and the 1998 Supplemental Biological Opinion with little effect. In the conduct of this study, the Corps should take advantage of recent advances in climatological forecasting in estimating future flood control needs. We offer as an example the work of Hamlet and Lettenmaier at the Department of Civil and Environmental Engineering at the University of Washington who have been doing experimental work with 1-year lead time streamflow forecasts for the Columbia River system. (Enclosure 4)

On page 9-59, we note the requirement to maximize transportation of summer migrants at collector projects in the Snake and at McNary except as needed to conduct transportation research. We will continue to work with NMFS, the Corps and our co-managers to develop an agreed-on plan of study for this work that incorporates voluntary spill at collector projects as part of the study design (Study TPE W-00-1, Objective 3).

On page 9-60, we support the concept of a spring transportation study at McNary Dam with the caveat that adult detection capability must be in place when the adults from the first study year return. Also, the issue of allowing for continuation of the existing "spread-the-risk" policy for Snake River spring migrants must be addressed if McNary begins collecting and transporting spring migrants.

On page 9-61, the statement that subyearling transportation studies in the Snake River "may" require special spill operations at one or more Snake River projects should be changed to "will" require. Without this provision, it will be impossible to achieve consensus on the study design that is necessary to provide study fish under the U.S. vs. Oregon agreement.

Also on page 9-61, we note that the latest study plan for transportation research submitted to the Corps of Engineers by NMFS (TPE W-00-1) does not specifically address the question of evaluating differential delayed mortality ("D"). This study plan needs to be modified to incorporate this aspect.

On page 9-62, we agree that any survival study of spring migrants at McNary must be delayed if it is not feasible to install a functional adult PIT tag detection system at that project.

On page 9-65, intake screens and juvenile bypass systems will still be necessary even if surface collection/bypass systems are developed and installed as long as those

surface collection systems are not capable of achieving fish passage efficiency standards by themselves.

In the discussion on the proposed spill program (pages 9-70 to 9-75), there is little difference in the amount of spill provided in the draft Opinion with that from previous opinions. Spill was

increased from 12 hours to 24 hours at Lower Monumental Dam and reduced from 64% of instantaneous flow at The Dalles to 40% of instantaneous flow. There are studies of daytime spill at John Day and increasing the daytime spill cap from 75 kcfs to 120% TDGS spill at Bonneville, but no specific commitment to implement these if results are favorable. Overall, there is little change from earlier opinions-certainly nothing to warrant the title "aggressive" for this part of the program. The opportunity to make significant improvements in spill still exists at Lower Granite, Little Goose and McNary projects by providing spill on a 24-hour basis. In addition, implementing daytime spill increases at John Day and Bonneville discussed above would be a significant improvement over the existing measures. NMFS and the Action Agencies should make additional spill improvements at these projects over what is shown in table 9.6-3).

The reduction in spill at The Dalles from 64% of instantaneous to 40% of instantaneous is still a questionable action. Analysis by the Fish Passage Center shows that the study fish in the study had significantly different travel times than did in-river migrants, leading one to question how well the study fish represented the run at large. Further, the FPC analysis shows that there was a high degree of variability in the survival of study groups that was not explained by the physical conditions at the dam. This indicates problems with the study fish and with other aspects of the study design. For example, rate of recapture at Bonneville Darn of daytime releases at The Dalles as higher than for night-time releases, which indicates that time of arrival at Bonneville Dam had a significant effect on the estimate of survival for each study group. Because of these problems and a number of other questions about the study design and results, NMFS should seriously reconsider the recommendation to reduce spill at The Dalles. On page 9-78, the deficiencies noted in the FPC analysis (which will be provided separately) should be addressed in the study design for The Dalles spill survival program.

On a related note, the use of even the assumed spill levels shown in table 9.6-3 in NMFS' SIMPASS modeling ignores the fact that the Corps of Engineers did not provide these levels of spill in 2000. This means that the modeling results are not reflective of what was actually implemented as an "aggressive" spill program. Because the SIMPASS model results do not look at alternative assumptions or give a variance around the estimates, this results in an overly-optimistic view of the effects of the 2000 Opinion spill program.

Actions by BPA to improve transmission line capabilities at known constraining spots will help provide Opinion spill and are a positive step. There should also be an action requirement on BPA to include interruptibility clauses in new power sales contracts. This will improve BPA's ability to deal with power emergencies by curtailing delivery rather than curtailing Opinion spill protection and flow augmentation measures. Presently, BPA can only do this on a willing-seller basis, which limits their flexibility and results in reducing or even eliminating fish protection

measures. Enclosure 5 is a letter WDFW sent to BPA as part of the recent Rate Case review, recommending such provisions for interruptibility in new power sales contracts.

On page 9-82, we support the action requiring the Corps to evaluate effects of daytime spill, especially at Little Goose and Lower Granite dams. In the action description and the discussion that follows, it was not clear if this applies to spring and summer spill periods. Summer spill at collector projects on the Snake is a prerequisite for consensus on a transportation study design for subyearling fall chinook and this action would be consistent with that need.

On page 9-84, we support the concept of less intrusive means of PIT-tag detection for juveniles at interrogation sites. The current system that routes juveniles through separators and flumes and subjects them to dewatering probably results in reduced survival of these fish.

On page 9-87 and again on page 9-89, there are actions requiring the Action Agencies to evaluate means of controlling predation by non-indigenous predaceous fishes through various means including project operations, habitat modifications and sport fish management options. We do not object to studying this issue, but would point out that WDFW and ODFW have already taken action in the lower Columbia to increase harvest on walleye less than 18" in length by removing the minimum size limit on this species. Research has shown that these younger walleye are more effective predators on juvenile salmonids than are larger, older walleye. Also, larger walleye are effective predators on northern pikeminnows, which means they can help control pikeminnow populations. Research that led up to the northern pikeminnow program showed that walleye, smallmouth bass and channel catfish were responsible for only a fraction of the total estimated predation on juvenile salmonids. Any additional predator control programs must be based strictly on biology.

On page 9-89, we note the action to study the extent of smolt predation by a small population of white pelicans on the McNary pool. The Action Agencies will need to closely coordinate any such study in Washington with WDFW since the white pelican is listed as an endangered species under the state Endangered Species Act.

On page 9-98, we question why there are no substantive measures to require the Action Agencies to implement measures that will result in attainment of Clean Water Act standards for temperature and dissolved gases. Also, NMFS should consult with the Environmental Protection Agency, the Bureau of Land Management and the U. S. Forest Service over Clean Water Act issues and their attainment of Clean Water Act standards on federal land holdings controlled by the USFS and BLM. Further, the EPA should be considered an Action Agency for the FCRPS areas.

On page 9-100, we fully support the requirement that the Corps of Engineers should obtain water quality variances from the states and tribes for the controlled spill program.

The Corps operates the projects and as project operator is responsible for either meeting Clean Water Act standards or obtaining variances allowing them to meet BiOp measures.

On page 9-109, under the discussion about advanced planning for possible additional actions in the event the RPA has failed, we see no specific action relating to upper Columbia River stocks. Specifically, consideration of drawdown at John Day or McNary projects. This should be specifically addressed in the BiOp.

On page 9-111, there is missing language in the action statement "In priority subbasins, BPA shall provide funds to and protect existing habitat that is at risk of being degraded." We presume the missing word is "preserve".

On page 9-113, we are puzzled why there is no specific mention of the most significant mainstem spawning and rearing habitat that still exists in the lower Columbia River, that being the Ives Island area. This is fully functioning habitat that only needs adequate flows to allow lower river fall chinook, lower river bright chinook and lower river chum to spawn and rear.

On page 9-13 1, the action requiring a study of habitat modification at the Ives Island site does capture all of the uncertainties that have been raised about this issue. However, it is ironic that the only remaining mainstem spawning and rearing habitat in the lower Columbia is being considered for modification in order to avoid having to augment flows to make it accessible, when elsewhere in the Opinion the protection of such habitat is given a high priority. ); WDFW remains skeptical that such habitat modifications at Ives Island are a workable solution.

On page 9-135, we question whether "natural" post-Bonneville mortality can be reasonably estimated in the present highly-modified, unnatural system. Any such estimate would be subjective and speculative.

On page 9-140, in order to facilitate identification of hatchery origin fish, NMFS must require that all hatchery releases must be marked or otherwise identifiable as hatchery fish. No exceptions.

On page 9-142, in the discussion under "turbine units" the range of survival improvement shown to date (preliminary data) for minimum-gap runner turbines at Bonneville First Powerhouse is shown as 0% to 3%. How was the 2% improvement that was modeled in the SIMPASS model developed? It would have been more appropriate to use the full range of observed values in the modeling.

On page 9-143, in the discussion on installation of extended-length screens at John Day Dam, there is no mention of the problems with the prototype units at John Day with high turbulence and high mortality of study fish. Until these problems can be overcome, installation of extended length screens will be delayed.

On page 9-150, the base case model run as described did not include even the minimal

Bonneville chum spawning flows included in the 2000 supplemental Opinion. Also, including increased drafts at Mica and Revelstoke is unrealistic. Essentially, the RPA results in no improvement in the ability to meet the NMFS flow objectives over the previous Opinions and, in the case of chum flows below Bonneville, the ability to meet them will be diminished if VARQ flood control is selectively implemented at Libby and Hungry Horse projects in Montana.

On page 9-152, an additional 2 feet of draft from Grand Coulee in August will have an additional adverse effect on flows below the project in September if the project is refilled to 1283'. This will impair the Action Agencies' abilities to provide flows for lower river fall chinook below Bonneville as described in the Conservation Recommendations.

On page 9-153, the additional draft of the Mica project in July and August will not likely occur. This should be removed from the final Opinion unless it is still a possibility.

On page 9-154, under the discussion of effects of predator control, we question the basis for the stated 10% reduction in predation loss for both yearling and subyearling juveniles as the result of the RPA. NMFS has not provided any information to substantiate this estimated 10% red

On page 9-155, in the discussion about percentage of each species transported, it is unclear what population of fish is being referred to. Is it the estimated number of fish in the basin at the beginning of migration, the estimated number of fish reaching Lower Granite pool or the estimated number of fish reaching the Lower Granite project itself?

On page 9-156, we support the reduction in the use of trucks for transporting fish. Delaying the onset of transportation at the beginning of the season and extending the use of barges into the summer are actions that will reduce the use of trucks for transportation. NMFS should include an action in the RPA requiring BOR to screen the intakes for Burbank No. 2 and No. 3 pumping plants adjacent to the Columbia near Pasco, Washington no later than March of 2002. These diversions were mentioned in Section 6.2.5.2.5 as being unscreened, but no action to correct the problem was required. WDFW has been working with BOR to screen these diversions and the proposed timing is feasible.

## **10.0 INCIDENTAL TAKE STATEMENT**

On page 10-2, we note that table 10. 1 - 1 only includes estimates of juvenile mortality. A similar table for adult mortality should also be developed. The section states that these estimates are developed for a 10-year period under the assumption that all RPA measures will be implemented, no later than 2010 and that incidental take will decline during the period of the BiOp. However, the table shows no decline in mortality

as the result of the RPA for Snake River spring/summer chinook, which is at variance with this statement.

The statement that incidental take for lower Columbia chinook and chum and Snake River fall chinook will be authorized "if flow operations are implemented as described in Section 9.6.1.2" clearly means that all sources of additional water for flow augmentation are implemented including Albeni Falls and additional water from Canada. For lower river chinook and chum, implementation of VARQ at Libby and Hungry Horse projects will result in a reduction in ability to meet winter spawning and incubation flows in some years.

On page 10-6, research on smolt-to-adult survival of subyearling fall chinook in the Snake River will require special spill operations at the four collector projects in order to provide acceptable conditions for in-river migrants. If such conditions are not provided, it is unlikely WDFW can provide the necessary study fish under the terms of the current U.S. vs. Oregon management agreement. We recommend NMFS and the Action Agencies develop a study proposal that clearly provides for spill as part of the study design.

On page 10-7, under the discussion of dissolved gas monitoring, the current schedule calls for sampling for gas bubble disease symptoms only two days a week at most projects, not daily. Smolt monitoring activities at the selected ectos are conducted daily.

## **11.0 CONSERVATION RECOMMENDATIONS**

Section 11. 1 should be re-titled. The effect of the recommendation would be to make existing habitat at Ives Island accessible to LCR chinook in October, not "create" spawning habitat. We recommend that this be made part of the RPA and not a conservation recommendation, which places no requirement on the Action Agencies to implement it. As stated earlier, WDFW disagrees with the NMFS assessment in Section 8.0 that LCR chinook are not jeopardized by the operation of the FCRPS. The fact that this is the sole remaining mainstem spawning habitat for this ESU makes it a critical part of its life history diversity and thereby worthy of formal protection under the RPA

In Section 11.2, the effects of transportation (collection, holding and transportation) should also be included in the evaluation of the effects of the FCRPS on infectious disease transmission.

## **SECTION 12.0 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENTACT**

WDFW appreciates the inclusion of this section in the BiOp, and the discussion of the impacts of the FCRPS on the estuary and the plume. We are concerned that the section did not include any discussion of Eulachon (*Thaleichthys pacificus*). The

Columbia River population is one of the major populations of Eulachon, and it has recently suffered a dramatic decline in abundance.

### **13.0 REINITIATION OF CONSULTATION**

In the discussion on performance standards, the statement that these are described in Section 9.2 is only partially correct. Given the fact that these standards are still being developed, it is not possible for us to review or comment on their completeness or sufficiency.

## **APPENDIX A BIOLOGICAL REQUIREMENTS, CURRENT STATUS AND TRENDS: TWELVE EVOLUTIONARILY SIGNIFICANT UNITS**

On page A-1 1, we note the use of an interdam loss estimate for adult SR spring chinook of 50% in calculating expected returns to the index areas shown in Table A-4. This conflicts with the 80% estimated adult survival through the FCRPS shown in Table 9.7-5 on page 9-158.

On page A-24, Table A-6c, we are puzzled why there is no estimate of initial population size for the Lewis River "bright" fall chinook. Data are available to calculate this parameter and were cited in the PATH Decision Analysis Report for Snake River fall chinook. Between 1994 and 1997, the Lewis River "bright" fall chinook spawning population has ranged from 3,400 to 21,000 adults, with an average for the period of 11,000 fish.

On page A-27, Table A-6d, we note the same issue for Lewis River "bright" fall chinook. This population has a well-documented database with estimates of total population size. These data are available from WDFW and should have been included in the analysis of risk extinction.

On page A-5 1, the statement that "there are no reliable estimates" for lower Columbia River fall chinook is not correct. These data were used in the PATH Decision Analysis Report for Snake River fall chinook and are readily available.

On page A-53, we note that the analysis of Lambda and risk of extinction for the LCR chinook ESU does not contain any data for Washington stocks. As has been stated above, there is extensive data available for the Lewis River and the Coweeman, which WDFW can make available to NMFS.

On page A-77 in Table A- 16, we are curious why NMFS did not include Bonneville ladder count data for chum prior to 1989. These data are readily available back to 1938 and would give a much better picture of the decline of this portion of the ESU. Even if the counting period in a particular year did not cover the entire adult chum migration, it would still give a relative view of the status of the chum population above Bonneville Dam.

## **COMMENTS ON THE DRAFT SALMON RECOVERY STRATEGY**

### **VOLUME 1**

#### Harvest Allocation

We take exception to the interpretation of Federal trust responsibility to tribal fisheries that is expressed throughout this document as a priority right, superceding non-tribal fisheries. We are respectful of tribal treaty rights, and particularly the importance of tribal ceremonial and subsistence fisheries. However, court orders establish that treaty and non-treaty fisheries shall share equally the opportunity to harvest fish not needed for escapement, in the absence of equitable factors suggesting another division. *United States v. Washington*, 384 F. Supp. 312, 417 (W.D. Wash. 1974), *aff'd*, 520 F.2d 676, 683 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1976); see Brief of Intervenor-Appellee the Confederated Tribes of the Warm Springs Reservation of Oregon at 21, *Sohappy v. Smith*, 529 F.2d 570 (9th Cir. 1976) (Nos.742409/74-2376). This principle applies to weak stocks, such as ESA-listed stocks, as well as abundant ones. See *United States v. Oregon*, 913 F.2d 576, 583 (9th Cir. 1990). The "conservation necessity" limitation on the states' authority to regulate treaty Indian fishing does not require that non-Indian fisheries be restricted more than treaty fisheries to provide adequate escapement. *Washington Game Dep't v. Puyallup Tribe* (Puyallup 111), 433 U.S. 165, 177 (1977). Treaty Indians and non-Indians share the responsibility to allow sufficient escapement. *United States v. Washington*, 520 F.2d 676, 686 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1976); see Puyallup 111, 433 U.S. at 177. Treaty Indians and non-Indians alike share the responsibility to allow sufficient escapement.

We are concerned that our conflicting interpretations arise from the lack of a Columbia River Fish Management Plan (CRFMP), and we suggest that development of a new plan by spring 2001 be included as a Performance Measure.

#### Harvest Reform

Washington strongly supports the current restructuring of fisheries, to improve their ability to target on abundant hatchery and natural stocks, and decrease impacts on weak stocks, including ESA-listed stocks. The regional goal is sustainable and harvestable levels of salmon, and we share the Federal assumption that that goal can only be attained with increased use of selective fishing tools. A new CRFMP should provide a structure for implementation of selective fishery tools.

### Hatchery Reforms

At present, the region lacks a specific program for operation of hatcheries in the Columbia Basin. The Council's Artificial Production Review, while laudable lacks sufficient specificity to provide a blueprint. A new CRFMP must be developed that is based on Hatchery and Genetic Management Plans, provides guidance on supplementation, settles mass marking issues, and provides harvest for treaty and non-treaty fisheries. We suggest development of a new CRFMP that includes these issues, by spring 2001, as a Performance Measure. Without such a plan agreed by all parties, we are concerned about the Federal proposal to transfer ownership of some hatcheries. We endorse the hatchery reform recommendations in the Four Governor's letter.

### Environmental Education

The Strategy lacks any real consideration of the value of public education about the natural resources of the Columbia Basin as an integral part of a comprehensive salmon recovery strategy. This unfortunate oversight should be remedied. Within a year, the Watercourse and Project WET will be releasing a new curriculum, *Discover a Watershed: the Columbia*. The Federal Caucus should strongly support efforts such as this, both by inclusion in the Strategy and by providing funds for distribution of materials, teacher training sessions and follow-up support services.

### Clean Water Act

The Bureau of Land Management, U.S. Forest Service and the Environmental Protection Agency should consult with NMFS on the implementation of measures to achieve Clean Water Act standards on federal lands in the basin.

On page 32 of Volume 1, Conclusions, NMFS "concludes that the plan will lead to long-term conservation and recovery of the listed salmonid stocks..." [emphasis added] while conceding that "this conclusion is made in the face of considerable uncertainty". These statements do not support each other. On the basis of the information presented in the Biological Opinion, we believe that NMFS has overestimated the benefits from actions identified in the RPA and in the other Hs, has underestimated the needed improvement in survival for the various ESUs and has overestimated the likelihood of recovery. Clearly, the plan may lead to recovery if the assumptions NMFS has used in its modeling are correct.

We also note the absence of the EPA and the two land management agencies, the BLM and USFS in the discussion of off-site mitigation measures. These agencies need to be active participants in this process. Also, we note that off-site measures have not been specifically identified at this point, as is implied in this section.



In the table titled "List of Habitat Actions", on page 62 Volume 1, there should be an action requiring the Corps of Engineers to conduct a systematic study of flood control and implement needed changes. On page 63, BPA and BOR also have a federal role and responsibility in providing adequate spawning and rearing flows at Vernita Bar. The operation of Grand Coulee is key to meeting Vernita Bar requirements. Similarly, BPA has a direct role in providing flows for spawning fall chinook and chum at Ives/Pierce Channel (IPC).

On page 79 under the discussion about Performance Standards, the survival performance standards for the FCRPS do not support recovery in and of themselves. Because NMFS has not defined the overall impacts of the FCRPS on the listed stocks, it is impossible to define the responsibility of the FCRPS operators in implementing off-site mitigation actions sufficient to offset the deficiencies of the BiOp. This results in a lack of direct accountability for the FCRPS and a shifting of at least some portion of that responsibility to other entities.

Under the discussion about the Idaho Power Company's Hells Canyon projects on page 81, the statement that "[t]hese performance improvements will be based on the nonfederal hydropower's portion of the population growth rate necessary to achieve survival and recovery" appears to mean that NMFS will perform an assessment of the impacts of the Idaho Power Company projects on listed species. This is inconsistent with the approach taken with the FCRPS where NMFS specifically declined to assess impacts of the FCRPS.

On page 85 in the table titled "List of Hydropower Actions" there is no definition of the term "spread the risk" in regards to transportation measures. We do not believe that spread the risk can be defined as collecting and transporting as many fish as possible, which appears to be the federal strategy, especially for subyearling fall chinook. Also, we are disturbed that there is no role for the states. This is not acceptable or consistent with the intent of the Regional Forum. There is also no role for the Northwest Power Planning Council identified in this table. The tribal role, as with the other Hs is listed as "To be determined".

## **VOLUME2**

On page 4, we question the logic behind the statement that "[r]estoring degraded habitat is of lower priority" than protecting currently-productive habitat. We agree that protecting healthy habitat is critical, but it does not necessarily increase fish production in a watershed. On the other hand, improving degraded habitat will increase potential productivity. We suggest that a better approach would be to prioritize habitat measures on a case-by-case basis based on ease of implementation, potential benefits and relation to other habitat parcels in the watershed.

On page 5 the objective for flow, passage and screening problems states that all issues will be

resolved in the priority subbasins over a 16-year period. We note that this is beyond the scope of the BiOp, which has a 10-year life. This underlines the concern that habitat measures can be planned, implemented and show measurable benefits within the period of the BiOp so that the success of the RPA can be evaluated.

On pages 8 and 9, the discussion about the NPPC subbasin and watershed assessment and planning process, we are concerned by the perceived lack of coordination between the Federal Caucus and the NPPC. This is especially a concern since the NPPC has not proposed a specific process for completing subbasin plans based on the subbasin assessments that are intended to be completed in early 2001.

On pages 13 and 17, we are puzzled by the criterion that the BLM and Forest Service limited their choice of priority subbasins to those below the four Snake River dams. The rationale given is that there would be inadequate escapement for "optimum utilization of restored habitat". This seems like a tacit acknowledgement of the detrimental effects of the Snake River dams on upper Snake River salmon populations. It also seems like a case of putting the cart before the horse-not enhancing habitat unless fish populations are large enough to fully utilize the habitat. The objective of habitat improvement should simply be to enhance depressed populations. The statement at the bottom of the page that "improving the condition of federal land in [non-federal habitat] would only produce limited additional value for these fish" seems to be nothing more than an excuse for federal inaction. It is critical that federal and non-federal habitat enhancement be closely coordinated and it underlines the need for the states to be closely involved in the planning and implementation process. Under the BiOp, there is no well-defined role for the states.

On page 18, the statement that the anadromous fish spawning and rearing capacity on federal land is much greater than can be used by the small numbers of returning adults underlines the profound negative effect of the FCRPS and the inadequacy of the RPA in ensuring adequate escapement to utilize both federal and non-federal habitat. It also raises the question as to how limiting tributary habitat is in general in comparison to FCRPS effects.

On pages 20-22 under the discussion on Mainstem Habitat, we are confused by the statement on page 20, that the Columbia mainstem below Bonneville Dam is discussed under Estuary Habitat, yet the list of sampling reaches identified for Mainstem shows that all three of the proposed general sites on the Columbia are potentially below Bonneville (above the Sandy River confluence) or definitely below Bonneville (below the Multnomah Channel confluence and below the Cowlitz). In all of this discussion, there is no specific mention of the sole remaining mainstem spawning and rearing habitat in the lower Columbia, the Ives Island area.



**COMMENTS ON THE U.S. FISH AND WILDLIFE SERVICE  
DRAFT BIOLOGICAL OPINIIONON KOOTENAI RIVER STURGEON  
AND BULLTROUT**

Our principal concern with this BiOp is that there are no new measures provided to deal with Kootenai River sturgeon and bull trout below the Libby project. Instead, the volume of water originally identified in the 1995 FCRPS BiOp is now being used to inadequately meet the needs of three listed species, rather than the one originally intended. This has led to direct conflicts among the needs of the three species, the 2000 season being a case in point. The USFWS needs to look for additional measures to deal with these species.

As stated in our comments on the FCRPS BiOp, we do not support the selective implementation of VARQ flood control at Libby and Hungry Horse projects because of the adverse effects in some years on Lake Roosevelt and on winter flows in the lower Columbia River. Instead, systemwide revisions of the outmoded and overly-conservative flood control program of the Corps of Engineers are needed.

Finally, although not part of the present draft BiOp, we are concerned over the conflicts between the needs of Snake River snails and salmon that arose during the spring of 2000. Because of low river flows at Milner Project and because of a sharp increase in irrigation demand, flows below Milner dropped drastically. BOR proposed to use the 427 kaf of salmon augmentation water from the upper Snake Basin to maintain flows below Milner, which was rejected by the salmon managers because of the high probability of low flows for salmon later. Although there was no field assessment of the effects of this flow reduction, it is likely that there was a significant loss of snails. USFWS needs to reinitiate consultation with BOR on the effects of irrigation diversion on BOR's ability to protect listed snails.